



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW1921G BYPASS RATIO: 11.4  
 UNIQUE ID NUMBER: 01P20PW188 PRESSURE RATIO ( $\pi_{co}$ ): 35.8  
 COMBUSTOR: TALON X, Block-C  
 ENGINE TYPE: TF RATED THRUST ( $F_{oo}$ ) (kN): 100.3

### REGULATORY DATA

**\*\* DATA SUPERSEDED \*\* SEE FOLLOWING UID FOR REVISED DATA: 04P20PW201**

| CHARACTERISTIC VALUE:                        | HC  | CO   | NO <sub>x</sub> | SMOKE NUMBER |
|--|-----|------|-----------------|--------------|
| D <sub>p</sub> /F <sub>oo</sub> (g/kN) or SN | 0.3 | 28.8 | 37.0            | 3.3          |
| AS % OF ORIGINAL LIMIT                       | 2.0 | 24.0 | 33.0            | 14.0         |
| AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )      |     |      | 41.0            |              |
| AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )      |     |      | 47.0            |              |
| AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )      |     |      | 52.0            |              |
| AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )      |     |      | 60.0            |              |

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

| MODE   | POWER SETTING (%F <sub>oo</sub> ) | TIME (minutes) | FUEL FLOW (kg/s) | EMISSIONS INDICES (g/kg) |           |                 | SMOKE NUMBER |
|--|-----------------------------------|----------------|------------------|--------------------------|-----------|-----------------|--------------|
|  |                                   |                |                  | HC                       | CO        | NO <sub>x</sub> |              |
| TAKE-OFF   | 100                               | 0.7            | 0.710            | 0.00                     | 0.00      | 22.20           | 2.6          |
| CLIMB OUT  | 85                                | 2.2            | 0.590            | 0.00                     | 0.00      | 18.10           | 1.6          |
| APPROACH   | 30                                | 4.0            | 0.210            | 0.10                     | 2.70      | 10.00           | 0.8          |
| IDLE   | 7                                 | 26.0           | 0.070            | 0.10                     | 19.80     | 5.50            | 0.5          |
| LTO TOTAL FUEL (kg) or EMISSIONS (g)                               |                                   |                | 270              | 21                       | 2356      | 3199            | -            |
| NUMBER OF ENGINES  |                                   |                |                  | 1                        | 1         | 1               | 1            |
| NUMBER OF TESTS  |                                   |                |                  | 3                        | 3         | 3               | 3            |
| AVERAGE D <sub>p</sub> /F <sub>oo</sub> (g/kN) or AVERAGE SN (MAX) |                                   |                |                  | 0.2                      | 23.5      | 31.9            | 2.6          |
| SIGMA (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)             |                                   |                |                  |                          |           |                 |              |
| RANGE (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)             |                                   |                |                  | 0.2-0.3                  | 23.3-23.8 | 31.6-32.1       | 2.3-3.1      |

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

|                      |                 |
|----------------------|-----------------|
| BAROMETER (kPa)      | 102-103.3       |
| TEMPERATURE (K)      | 272-278.1       |
| ABS HUMIDITY (kg/kg) | 0.00122-0.00221 |

### FUEL

|          |           |
|----------|-----------|
| SPEC     | Jet A     |
| H/C      | 1.94      |
| AROM (%) | 17.8-18.4 |

MANUFACTURER: Pratt & Whitney  
 TEST ORGANIZATION: Pratt & Whitney  
 TEST LOCATION: Mirabel Aerospace Centre - Quebec  
 TEST DATES: 25/03/2018-26/03/2018

### NO<sub>x</sub> REGULATION PARAGRAPH

|   |                   |
|---|-------------------|
|   | 2.3.2 c) (CAEP/4) |
|   | 2.3.2 d) (CAEP/6) |
| x | 2.3.2 e) (CAEP/8) |

### REMARKS

- Data from Certification Report PWA-11601
- Block C combustor
- Certification in accordance with Part III, Chapter 2, of Amendment 8 of ICAO Annex 16 Vol. II.
- NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements:

x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)